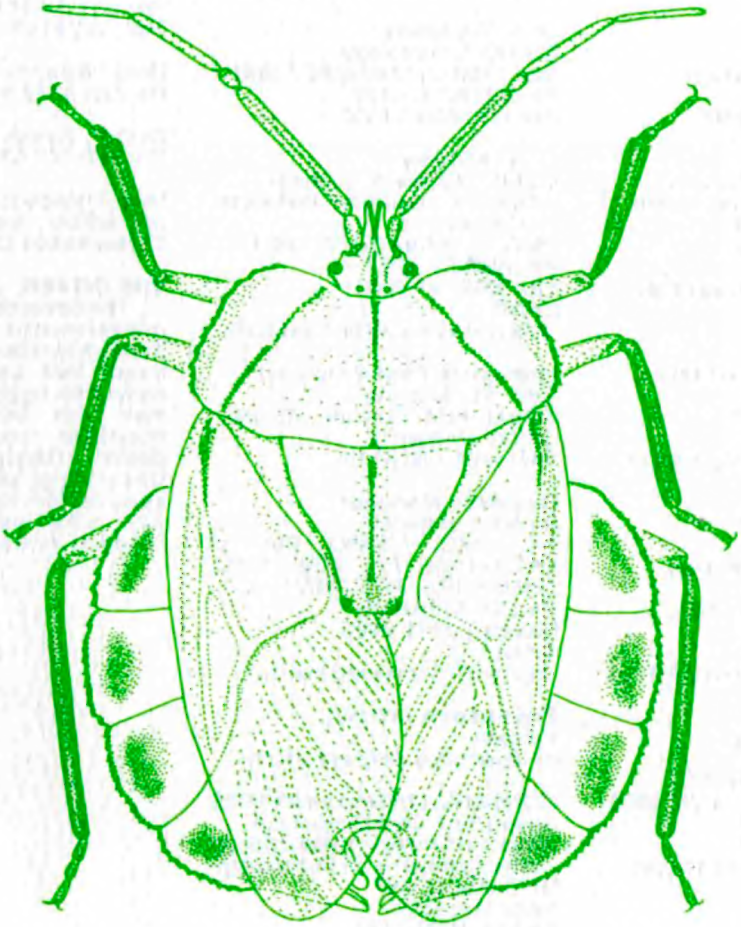
MYRMECIA

News Bulletin of the Australian Entomological Society Inc.
Volume 35, Part 3, August 1999
Australia Post Print Post Publication PP242296/00144. Price $5
ISSN 1323-6032



AUST. ENTOMOL. SOC.
EXECUTIVE ADDRESS
Aust. Entomol. Soc. Executive
c/- Dept of Entomology
University of Queensland
QLD 4072
AUSTRALIA

SOCIETY WEB SITE
http://www.uq.edu.au/entomology/aes/intro.html

Patron
The Honorable Sir William Deane AC KBE, Governor General of the Commonwealth of Australia

OFFICE BEARERS

President
Dr Jim Cullen
CSIRO Div. Entomology
GPO Box 1700
CANBERRA ACT 2601

Vice President
Assoc. Prof. M.P. Zalucki
c/- Executive Address above
Ph (07) 3365 2194
Fax (07) 3365 1922
Email
m.zalucki@mailbox.uq.oz.au

Secretary
Dr D.E. Walter
c/- Executive Address above
Ph (07) 3365 1564
Fax (07) 3365 1922
Email:
D.Walter@mailbox.uq.edu.au

Treasurer
Ms V.A. Brancatini
CSIRO Entomology
Long Pocket Laboratories
PMB #3 PO
Indooroopilly QLD 4068
Ph (07) 3214 2810
Fax (07) 3214 2885
Email:Veronica.brancatini@brs.ento.csiro.au

News Bulletin Editor
Dr M.J. Fletcher
NSW Agriculture, ARVC
Forest Rd, Orange, NSW 2800
Ph (02) 6391 3800
Fax (02) 6391 3899
Email: murray.fletcher@agric.nsw.gov.au

Public Officer
<vacant>

Chief Editor
Dr P.G. Allsopp
Sthn Sugar Experiment Stn
Box 651 Bundaberg, Q 4670
Ph (071) 59 3228
Fax (071) 59 3383
Email: pallsopp@bses.org.au

Technical Editors
Dr A.L. Bishop
Horticultural Research Station
Box 581 Gosford NSW 2250
Ph (02) 43481928
Fax (02) 43481910

Dr K.L. Walker
Museum of Victoria
71 Victoria Cres
ABBOTSFORD Vic 3067
Ph (03) 9284 0201
Fax (03) 9416 0475
Email: kwalker@mov.vic.gov.au

Dr A. Wapshere
CSIRO Entomology
Box 1700 Canberra ACT 2601
Ph (02) 6246 4137
Fax (02) 6246 4000

Dr A. Andersen
CSIRO Wildlife & Ecology
Tropical Ecosystems Research Centre
PMB 44, Winnellie NT 0821
Ph (089) 22 1727
Fax (089) 47 0052
Email
Alan.Andersen@terc.csiro.au

Immediate Past President
Prof. RL. Kitching
School Aust. Environ. Studies
Griffith University,
NATHAN, Qld 4111

Business Manager
Mr Mike Jefferies
c/o ANIC, CSIRO Div. of Entomology, PO BOX 1700, CANBERRA, ACT 2607
Ph (02) 62864033
Fax (02) 6246 4000
Email:
mjefferi@braidwood.net.au

Promotions Officer
Vacant
c/- Executive Address above

CONSERVATION COMMITTEE
Assoc/Prof. Jonathon Majer
School of Environmental Biology
Curtin University of Technology
GPO Box U1987
Perth WA 6001
Ph (08) 9266-7964
Fax (08) 9351 2495
Email imajer@info.curtin.edu.au

Dr T. New (Vic)
Ph (03) 9479 1111
Fax (03) 9478 5814

Dr R. Coy (Vic)
Ph (03) 9419 5200
Fax (03) 9416 0475

Dr P. Horne (Vic)
Ph (03) 9810 1528
Fax (03) 9819 5653

Dr E.G. Matthews (SA)
Ph (08) 8207 7500
Fax (08) 8207 7222

Dr A.N. Andersen (NT)
Ph (089) 22 1727
Fax (089) 47 0052

Dr R.V. Gunning (NSW)
Ph (02) 67631128
Fax (02) 67679370

Dr G. Williams (NSW)
Ph (02) 9339 8111

Dr D.P. Sands (Qld)
Ph: (07) 32142803

Vice President & Secretary are *ex officio* members of the Conservation Committee

THE COVER

The cover depicts *Peltocopta crassiventris* (Hemiptera: Tessaratomidae), a beautiful insect that provides maternal care of its eggs and nymphs for their first two instars. The illustration was prepared by **Geoff Thompson** of the Queensland Museum and was used in the logo for the 29th AES AGM and Conference in Brisbane in 1998.

MYRMECIA

CONTENTS

Editorial - The Future of *Myrmecia* 1
Letters to the Editor 3
Regional News
New South Wales 3
Northern Territory 6
Queensland 7
South Australia 11
Victoria 13
Overseas News 13
Electronic News 13
Coming Events 14
Notices 18
Society Notices - 30th AGM 19
Membership Appl. Form . . .inside back cover

ADVERTISING RATES FOR MYRMECIA

	Single Issue	4 Issues (One year)
Full Page	$60	$180
Half Page	$35	$105
Quarter Page	$24	$72

These rates apply to camera-ready copy supplied by the advertiser. Where this is not supplied, an additional charge may be made for the layout.

INSERTS - PLEASE NOTE: Inserts are no longer handled by the Editor. If you wish to include an insert in *Myrmecia* please contact Blackwell Science (Asia). Contact details are on the back cover of this issue.

NOTICE

Statements made in *Myrmecia* do not necessarily represent the views of the Australian Entomological Society. Items printed herein should not be reproduced without permission of the author of the material.

COPY DEADLINE FOR NEXT ISSUE

Under normal circumstances, material for publication in the November 1999 issue of *Myrmecia* would need to be in the hands of the Editor by **Friday 22 October 1999**. However, since there is no new editor-designate and the future of *Myrmecia* is in the hands of those who attend the Annual General Meeting in September it is uncertain where such material will need to be sent for publication. Presuming that *Myrmecia* has a new editor, or a new format (see proposal below), submission to murray.fletcher@agric.nsw.gov.au is acceptable either to be forwarded to the new editor or to prepare copy for web publication. Submission on IBM-compatible floppy disk or by fax, letter or carrier pigeon to the address below is no longer acceptable unless email options are unavailable.

Murray FLETCHER
AES News Bulletin Editor
Orange Agricultural Institute
Forest Road, ORANGE NSW 2800
Fax: 02 6391 3899
Email: murray.fletcher@agric.nsw.gov.au

SOCIETY HONORARY MEMBERS

Dr B.R. Champ
Dr I.F.B. Common
Dr E.N. Marks
Dr K.R. Norris
Dr C.N. Smithers
Dr D.F. Waterhouse

MACKERRAS MEDALLISTS

1984 Dr J.A.L. Watson
1986 Dr R.W. Sutherst
1988 Dr T.R. New
1990 Dr R.A.I. Drew
1992 Dr E.S. Nielsen
1996 Dr M.P. Zalucki

SOCIETY SUSTAINING ASSOCIATES

Aust. Entomol. Supplies
Integrated Pest Management P/L (Bugs for Bugs)
Monsanto
Novartis Crop Protection
Rhône-Poulenc Rural Australia

EDITORIAL

The Future of Myrmecia

I will be retiring from the position of News Bulletin Editor at the AGM in September after nearly eight years preparing *Myrmecia* for the Society. However, despite considerable effort by myself and other members of the Executive and Council to find a replacement Editor there appears to be no member prepared to take on the responsibility of producing this important vehicle for communication within the Australian entomological community.

There are several probable reasons for this.

Firstly, there are fewer entomologists able to devote part of their time to work for a Society in an honorary capacity. There may well be fewer entomologists employed in Australia than eight years ago. Retired entomologists usually don't have access to the facilities required to produce a publication of this nature. In any case, retired entomologists are very often just as busy as when they were employed.

Secondly, it is possible that other members feel that such a position might be beyond their capabilities. To those members I say, if I can do it, anybody can do it, assuming you have a reasonable grasp of the English language, a moderate attention to detail and a basic understanding of word processing. Inclusion of photographs is done by the printer and addition of logos for conferences can be achieved using cut-and-paste methods rather than scanning digital images.

Having said all that, I believe it is time for members to consider other formats for dissemination of the information contained in *Myrmecia*. Without a new editor, I seriously considered whether we would need to change to something like a "Society Page" in the Journal. This would obviously have to be limited to notices and announcements only and the charm of the Regional News reports would be lost.

A more viable option would be to move to a web-based publication.

Tentative discussions have been held between the Society's Executive, some other members of the Society's Council and Blackwells, who are prepared to host such a web publication.

As I see it, the following positive and negative aspects apply to this proposal:

POSITIVE

1. The time required by an Editor to produce copy for a web page would be less than for a printed publication. This is because the layout for a printed publication has more restrictions on it than a web page and the time taken to get each copy looking professional and flowing properly is considerably greater for a printed booklet than you might expect.
2. The cost of production of a web page is minimal compared with publication of a printed booklet.
3. Inclusion of colour photographs would be simpler and cheaper. Inclusion of ANY photograph on a web site is simple and cheap.
4. Links to other sites, particularly those concerning meetings, conferences and courses are possible so members need only click on the link to go straight there. The same applies to email addresses.
5. *Myrmecia* will be freely and widely accessible, thereby increasing the profile of the Society and the activities of members.
6. The Society's Constitution requires that *Myrmecia* is published four times each year, in February, May, August and November. There is no reason why this can't continue with a web-based publication with the advantage that additional material can be included on the site whenever available. This means that notices that arrive too late to be included in a particular issue can be added without delaying publication of the bulk of that issue. Such material could be highlighted by an Update or Addendum link.

NEGATIVE

1. The neat little booklet that we have all grown to look forward to curling up in bed/bath/other with will be no more. Reading *Myrmecia* in the bath while logged in to the web raises certain safety issues.
2. Not all members have access to web facilities, particularly younger and retired members. Those members who cannot access the electronic version from home, work, local library or school will have to receive a printout of the webpages which will be in stapled A4 format instead of the current booklet. If this is unacceptable, then surely there is one member out there who is prepared to put the time into continuing *Myrmecia* in its current form.
3. Since members pay to receive *Myrmecia* as one of the privileges of membership (some pay a reduced membership fee to receive only *Myrmecia* and not the Journal as well), having *Myrmecia* freely available on the web removes that need to subscribe in order to receive it. We could introduce password access only but this raises a whole new range of possible problems and removes the advantages of advertising ourselves to the world.
4. Are members going to remember/bother to log on to the web site each time a new issue is produced? If not, will this actually reduce the effectiveness of *Myrmecia* as a vehicle of communication for the Society. Because the timing of the Journal publication has now been

aligned with the expected publication of *Myrmecia* it will be possible for each issue of the Journal to carry a notice announcing that the new edition of *Myrmecia* is also available.

5. Addition of material to the site after "publication" of each issue may not be read by the bulk of the members unless members check regularly, between issues, for additional items.
6. Permanence of each issue on a website might be limited. Notices of meetings will become a dynamic section with new notices being added whenever available and old notices being removed when the meeting has passed. However, Regional News will be replaced each "issue". I suggest that the site carries four issues of Regional News at a time with the publication of each new issue requiring the removal of the oldest issue. In other words, reports remain on the site for 12 months and are then archived.
7. Permanence becomes a real issue for Research Reports which are regarded by members submitting them as scientific publications.

This issue of *Myrmecia* has been prepared as a web issue as well as in this printed form in order for members to have a look at a possible format. I am sure that the electronic version will be much prettier with a bit more development but the current version gives you a chance to try it out before the AGM. The electronic version can be accessed from the ASCU site at:

http://www.agric.nsw.gov/Hort/ascu.

I am grateful to NSW Agriculture and, in particular, my Program Manager Doug Hocking, for approval to host this draft electronic version of *Myrmecia* so members can have a test drive before the AGM.

These issues and others will no doubt be contentious and will need to be addressed at the AGM. Unfortunately, I will be overseas in September and cannot attend. I am, however, prepared to stay on as Editor of a web-based *Myrmecia*, subject to the approval of my employer, if this is the option chosen by the Society.

Murray FLETCHER
News Bulletin Editor

LETTERS TO THE EDITOR

Dear Murray,

re: The Mackerras Medal

The Mackerras Medal, the highest award of our Society, was established to honour the memory of **Ian Murray Mackerras**, first President of the Australian Entomological Society, who played a pivotal role in its foundation.

It is awarded every second year to a Society member under age 50 for excellence in entomology. There were awards in 1984, 86, 88, 90, 92 and 96 but none in 1994 or 1998. These omissions in my view do dishonour to Ian's memory.

I do not believe there were no eligible members in 1994 and 1998. The lack of suitably qualified nominees is probably due to apathy on the part of those members with the background knowledge to make nominations. It requires some effort to gather the requisite data about a nominee and to present a case.

I regard it as imperative that the Mackerras Medal not be allowed to continue drifting into this off-and-on mode. The simplest remedy might be to raise or abandon the age limit for nominees but perhaps the whole award needs re-thinking. Ian Mackerras's interests encompassed excellence in other contributions to entomological science besides pure research.

I look forward to hearing other members' views.

Elizabeth N. Marks

REGIONAL NEWS

NEW SOUTH WALES

University of Sydney, Orange

Zamir Hossain was appointed Research Assistant in the Pest Management Group. He will be working on a new project screening plant extracts as botanical insecticides against potato moth. **Cyrus Abivardi** (Swiss Federal Institute of Technology) visited Orange for three weeks in July to get the project off to a flying start. **Robert Mensah** (Australian Cotton Research Institute) also visited to join in the fun.

Another visitor during the winter was **S.K. ('Florry') Florentine** (Tropical Weeds Research Centre). He was working with **Raman Anantanarayanan** on the physiology of *Parthenium hysterophorus* when infested by insect biocontrol agents.

Geoff Gurr aided by computer whiz **Sally Brownlow** continues preparation for the first offering of a WWW-based IPM course in semester 1 2000. The course is nested within the College's

postgraduate program in sustainable agriculture but can also be taken as a 'stand alone' for professional development.

Australian Museum

Max Moulds has been working half time to enable him to complete his PhD thesis on the higher classification of cicadas. He will return to full time work after the International Auchenorrhyncha Conference in Wales in September. Meanwhile, **Margaret Humphrey** has been job sharing with Max and also working part time at the Macleay Museum. Her PhD work (on *Corasoides*, the platform weaving spiders) has been put on hold until Max returns.

Max recently returned from field work to western Queensland collecting further specimens of a new species of what may be Australia's largest cicada.

David McAlpine and **Barry Day** visited south west WA for three weeks collecting Diptera, especially the clawless upside-down fly associated with *Xanthorrhoea*. David continues his work towards a genus level review of the Australasian Platystomatidae (now called signal flies). In this connection, he visited ANIC in May and borrowed more specimens.

Prof. Walter Rossi (University of L'Aquila, Italy) visited David in June to study ectoparasitic fungi (Laboulbeniales) on the collections of Diptera and Coleoptera. He made some interesting discoveries.

Courtenay Smithers is identifying Psocoptera collected in N.E forest surveys conducted by the Museum's Centre for Biodiversity as well as his own recent field work in N.E. NSW. He continues to collect data on butterfly migration.

Dan Bickel continues his work on the systematics of the fly families Dolichopodidae and Empididae. He attended the Fourth International Congress of Dipterology in Oxford and presented two papers. After that he studied collections at museums in Berlin, Dresden, Vienna and London. As well, Dan has just completed a sticky trap study of eucalypt trunk fauna in the plateau wet sclerophyll forests of Carrai State Forest and Werrikimbe National Park, northern NSW. The trapping took place over four different seasons and the 252 sticky traps have yielded more than 100,000 specimens. This material has been sorted to family and is being analysed. Any guesses as to the most abundant family, almost 50% of the total?

The museum has recently completed incorporating several cabinets of modern Australian specimens donated by the Macleay Museum and continues to expand its database under funding of State government collection enhancement funds.

Recent visitors to the museum have included **Charlie and Karen Messenger** (University of Nebraska) State Museum, **Steve Marshall** (University of Guelph, Canada), **Stanley Wellso** (Texas A&M University), **Hannes Bauer** (Natural History Museum, Berne, Switzerland), **Kees van Actharberg** (National Naturhistorisch Museum, Leiden, Netherlands), **Chris Darling**, (Royal Ontario Museum, Canada), **Marcelo Tauzces** (Centro Universitorio de Areraquera, Brazil), **Mike Picker** (University of Cape Town, South Africa), **Lars Vilhelmsen** (University of Copenhagen, Denmark) and **Junichi Kojima**, (Ibaraki University, Japan).

Macleay Museum
University of Sydney

The Macleay Museum's Entomology Collection at the University of Sydney has been inactive for several years following the retirement of **Woody Horning**. It has been cared for but open only on specific request for visiting scholars and no loans had been made. Since the beginning of 1998, however, it has been a working collection again, open on a regular one day a week basis with **Margaret Humphrey** as collection manager and several regular volunteers.

The University has confirmed its commitment to retaining and maintaining the collection and we have developed a revised collection policy. The Macleay will retain all the original material and concentrate on this material and other exotic material. This means that additions to the collection will be very limited but this will allow more time to attend to the material already held. Margaret is going through all the old records and chasing up anomalies.

After widespread consultation, and with reference to all the original donors, most of the modern (post WW2) Australian material has been assessed and offered to other museums, in particular to ANIC and the Australian Museum. The material was transferred at the beginning of the year.

With two volunteers, work is proceeding in the repair of specimens, their sorting and placement in unit trays and appropriate location. Rather than concentrate on detailed curation of select groups,

the intention is to make the whole collection more accessible to visiting taxonomic specialists while retaining the historic integrity of the collection.

Several lost types have come to light. **Rolf Oberprieler** recently discovered several lost Drury types while visiting and **Courtenay Smithers** and **John Peters** believe they have located a lost butterfly type. Such discoveries are becoming a regular event and the specimens are being well cared for.

The original 'Chippendale' style cabinets brought to Australia by **Alexander Macleay** in 1826 have been transferred on a 5 year loan to Elizabeth Bay House, back to Macleay's library. They were cleaned and conserved by International Conservations Services (paid for as a condition of loan by the Historic Houses Trust) and look wonderful.

Geoff GURR
Regional Councillor

NSW Agriculture, Orange

After nearly 30 years in NSW Agriculture, **Vic Edge** is retiring. His impact on agriculture in NSW and entomology in Australia has been immense and will continue after retirement through his association with the Cotton CRC, Cotton R&D Corporation and the National Registration Authority. Vic was trained at Durham University in the UK and came to Australia in 1970 to take up a position in Entomology at the Biological and Chemical Research Institute at Rydalmere. His main area of interest was originally ecology but he became an authority on pest management and eventually the management of insecticide and miticide resistance. He was the first person to detect miticide resistance in two spotted mite in Australia. In 1974 he was promoted to Assistant Director of Entomology. Vic and Max Casimir as Director made a formidable management team that saw entomological research in NSW

Vic Edge (centre) with Eberhard Schicha and Graham Thwaite at the Opening of ASCU in 1997
[photo: Andrew Beattie]

Agriculture prosper. When Max retired, Vic took over as Director but had to contend with the duti es of both positions because the slow process of closing BCRI by attrition had begun. In 1991 Vic was appointed Director of BCRI and also Deputy Chief of NSW Agriculture's Division of Plant Industries. This meant that he spent half his time in Orange in HO and the rest at Rydalmere. WIth the closure of BCRI in January 1997, Vic was able to spend all his time in Head Office as Deputy Chief of the Division. He is now doing the rounds of farewells, dinner at the Patmos with the Executive, morning tea with the Program Managers, morning tea with the Division, drinks with his friends at the Metropolitan, dinner at Narrabri with his cotton colleagues and lunch at Rosehill with the Rydalmere faithful.

Orange Agricultural Institute

Graham Thwaite has commenced work on a major project aimed at developing integrated pest and disease management for the prune industry, funded by the Dried Fruits Research and Development Council. This three year project will review the insects, mites and pathogens associated with prune orchards under differing cultivation regimes with the ultimate aim of increasing the effectiveness of pest and disease management while minimising pesticide use and maintaining the profitability of the industry. The project includes a significant taxonomic component to be undertaken by ASCU.

Danuta Knihinicki has submitted her MSc thesis to Macquarie University. Her project examined the role eriophyid mites play in the melaleuca oil industry on the NSW North Coast and she spent a week delivering some of the results to the North Coast oil producers in early August. The Southern red mite problem hasn't gone away, it's just resting during the winter months and is expected to resurface as an interstate quarantine issue in October when the last season's eggs begin to hatch.

Peter Gillespie attended a fruit fly identification update course in Brisbane in July, a fruit fly molecular session in Canberra in May (**Brad McNeil** also attended) and a meeting in Canberra in July discussing strategies to achieve complete databasing of the agricultural collections of Australia and eventually making all the databases available, via a linked network, to central agencies such as AQIS and BRS. Also in July, **Murray Fletcher** attended a meeting at the Australian Museum of the Interagency Taxonomy Working Group monitoring progress on the Taxonomy Initiative funded by the NSW Biodiversity Strategy. Murray will also be off to Cardiff at the beginning of September to attend the 10th International Auchenorrhyncha Congress. He will be presenting a poster on his Key to the Australian Planthoppers on the web (http://www.agric.nsw.gov.au/Hort/ascu) and a paper presenting the results of his ABRS-funded project on the Australian deltocephaline leafhoppers.

John Macdonald continues to spend half his time doing fruit fly work at EMAI, Camden, another half in Wagga with the experimental component of the work, another half on the North Coast with fruit flies in Blueberries and the other half trying to do his job in Orange.

Visitors to ASCU have included **Penny Gullan** and **Jun Lit** to borrow further coccoid material. Penny and Jun also took the opportunity to update and identify much of the unsorted coccoid material in the collection. **Bronwyn Underwood** (Australasian Butterfly Company) dropped in late in July to see the collections while in Orange on other business. We have also been visited by the Orange Tourism Board who are keen to see the Insect Collection included on a regular science tour of the Central West which will hopefully taken in the Warren Somerville Gem and Fossil Collection in Bathurst, our collection in Orange and the Age of Fishes Museum at Canowindra. This could prove to be a lucrative source of funding for all three establishments.

Centre for Entomological Research and Insecticide Technology (CERIT)
University of New South Wales

In September CERIT will once again host a one day Industry Briefing Symposium. This year the title of the event will be "Management of Public Health Pests". Attendees are expected from a wide range of industry and research bodies, including the pest management, public health, food sales and manufacturing industries, restaurants, hospitals and educational institutions. The symposium will be held on Thursday 30 September at the University of New South Wales. Look to the Coming Events section for more details.

Since our last entry in November, there have been some staffing movements at CERIT. **Julie-**

ann Short had a baby boy and is due to return to work in October. Julie-ann's maternity leave replacement, **Nicole Honeymann**, left us in January to begin a Bachelor of Science degree at Monash University. Our very best wishes go with her. **Paul Doyle**, who visited our labs to complete some of the work towards his Masters Degree from the University of Townsville, stood in admirably in Nicole's absence until we were able to appoint her replacement. We are pleased to welcome **Sarah Lunau** to the CERIT community. Sarah completed a Bachelor of Science (Hons) degree at the Australian Catholic University, graduating this year.

After more than 30 years of CSIRO presence at CERIT our collaborative relationship is evolving. CSIRO Molecular Science has provided space for **Chris Virgona** and **Hieu Nguyen**, our CSIRO seconded staff, at its new laboratories in North Ryde. A new form of collaborative agreement is being finalised which will underpin further joint projects but, in the meantime, we wish Chris and Hieu all the best in their new digs.

Our entry this month couldn't go past without our own April 14 Hail Storm story. Our building was right in the 'eye' of the storm that night. Local residents tell us that the hailstones were the size and shape of toilet soap. It was 'hasta la vista baby' to most of the skylights and the south-facing sections of roof now are peppered with (patched!) holes the size of cricket balls. As if this wasn't enough the hail, which blocked all the box gutters, was followed by an absolute deluge. This water had nowhere to go but down the walls, across the floors, along the hall and down the stairs.... CERIT staff were greeted by a soggy work place on that Thursday morning. Luckily for us, our section of the building was somewhat protected by a Northerly aspect so our section of the roof was better off than some and our ceilings were largely spared. There was some damage to the odd piece of equipment (one computer, 2 printers and a freezer) but most of our computers and major equipment and all of our insect cultures were unaffected. We were back to normal operations within a week or two unlike some other less fortunate departments at UNSW. As it happens, the occupants of our building have been pressing the University (for years) to fix the roof. Now our prayers have been answered and the music of hammering and power tools is ringing in our ears. It's an ill wind (well, 'storm') that blows no-one some good. However we could have done without the unsolicited training sessions on the 'Aqua-vac'!

Chris Orton attended the recent PICA termite workshop at Homebush and the AEPMA conference at Panthers Leagues Club, Penrith. Recent visitors to CERIT have included **Tony Sweeney** from the South Pacific Commission, Vanuatu; **Roger Sargent**, Schering-Plough; **Michael Gibian** and **Ian Thompson**, Reckitt & Colman; **Ken Constantine** and **Teresa Aruego**, SANIP; **Sia Pelekis** and **Raphael Cohen**, Bayer Australia Ltd.; **Danny Lambino**, Johnson & Johnson; **Shaul Gilan** and **Eli Zered**, Netafim.

NORTHERN TERRITORY

Firstly I must apologise for not contributing to the last newsletter.

Pressure came to bear on local eNTomologists to host the AGM next year. After a bitter battle of wills for the much coveted position of Coordinator, **Graham Brown** emerged the victor. The response from members has been excellent allowing a number of sub-committees to be formed to lighten the load. The search for sponsors has started so if anyone has any ideas...

CSIRO Entomology

Penny Edwards and **Quentin Paynter** have been away attending the X International Symposium on the Biological Control of Weeds in Bozeman, Montana, USA. Quentin has now returned and is busy continuing with an experiment to test the effect of feral mammal disturbance on *Mimosa pigra* establishment and psyching himself up for a large-scale experiment to develop an integrated control strategy for *Mimosa*, in collaboration with the DPIF. Bulldozing and herbicide treatments have already been set up and a burn treatment will be performed as soon as the field site has dried sufficiently. Penny is currently in South Africa working with colleagues on the temperate weed bitou bush (*Chrysanthemoides monilifera*). In her absence **Tim Schatz** is busy tending to a large-scale experiment to measure the impact of introduced biological control agents on the performance of *Mimosa pigra*. A number of agents are now well-established and causing conspicuous damage in the field. **Kim Hare** is still busy sorting pickled *Chrysanthemoides* samples from temperate regions of Australia, examining the impact of the introduced seed fly *Mesoclanis*

polana. **Megan Hoskins** is on a busman's holiday, taking part in the Gouldian Finch survey near Katherine.

Territory Health Services
Medical Entomology Branch

The branch is now into the annual reporting period and we can report we have been able to contain the number of cases of Ross River virus disease to similar levels as last year. This year there were 132 laboratory confirmed cases in the NT compared with 127 last year which was the lowest number of cases for 9 years. As most of the population of the Northern Territory lives in Darwin or its surrounds, the Ross River virus cases are heavily skewed to Darwin as a residential address and mosquito control in Darwin can have a large impact on the amount of mosquito borne disease. There was an actual increase in the numbers of the salt marsh mosquitoes in Darwin as detected by the regular mosquito monitoring program, from 13,600 last year to 38,000 this year. However this increase was largely due to very high numbers in November and in the locality of one swamp system due to early and high rainfall flooding of all salt marsh habitats and included dispersal from breeding sites outside the Branch's main control area. Salt marsh mosquito adults have a high mortality in November and hence are not efficient as vectors then, although they resulted in a large number of pest complaints! Salt marsh control by helicopter was extensive and successful in other months of the wet season and was able to contain the amount of disease.

Starting in March this year **Martin Shivas's** tenure with the Branch was extended for 12 months to undertake further work on the biology and dispersal of *Culicoides* sp. Martin is hard at it now implementing practical solutions for his PhD thesis the results of which should be known soon. Martin and **Peter Whelan** recently tested a screen product reputed to keep biting midges out of houses and found it could not exclude *Culicoides ornatus* from one test cage to another. A report is available for those for which this information is critical.

Andrea Wilson has been on a steep learning curve and is now reaching a plateau of knowledge in urban and development project planning to prevent and reduce biting insect problems. She has just finished a report on the mosquito situation around Jabiluka and is now becoming intimate with approximately 50 km of storm drains directly under our improvement and maintenance program.

Gwenda Hayes is still juggling motherhood, university study and the MEB data base, the latter which is now at the point of signing off and is proving a boon to integrate all of our collection records and produce output reports. **Jane Carter** has taken charge of the field operation for mosquito control and, together with **Bryan Baker, Bernadette Haigh**, and **Dan Richards**, is going great controlling the early salt marsh mosquito hatches produced by early tides this year.

Peter Whelan is still busy with Departmental and Branch annual reporting, critical mosquito breeding site rectification and maintenance programs and assisting with all branch programs. He recently investigated a Quarantine interception of *Culex* mosquitoes in machinery from Singapore and can confirm that this genus can indeed travel by sea to Australia in very small amounts of water.

Department of Primary Industry and Fisheries
Entomology Branch

Stuart Smith has returned from an AQIS consultancy in the Philippines. Stuart was advising on area freedom from mango pulp weevil. On his return he folowed up with a visit to Brisbane to attend a meeting of the Fruit Fly Surveillance Group. **Lanni Zhang** has been promoted to technical 2. **Mike Neal, Magen Geyer** and **Graham Young** are finding that an unusually cold dry season is complicating the study of *Mastotermes*. The termite is remaining well insulated deep in the soil, refusing all entreaties to move into aggregation drums and be poisoned.

Northern Australia Quarantine Strategy

After returning from 3 weeks in Irian Jaya, **Glenn Bellis** got heavily involved in the collection and examination of regurgitated pellets of rainbow bee eaters. He hopes to develop this as a technique to monitor for Asian honeybees. A welcome distraction from this sisyphean task was provided by the visit of **Alice Wells** and **Laurence Mound** on their annual pilgrimage north. Glenn took them on one of his monthly monitoring trips to Cobourg Peninsula and the Tiwi Islands. Needless to say thrips were collected and mosquitoes swatted. Glenn was also visited by **Sukarsih**, one of the leading parasitologists in Indonesia to discuss vectors of arboviruses and trypanosomes. In May, the NAQS program officially transferred

from NTDPI&F to AQIS.

QUEENSLAND

Department of Zoology and Entomology
The University of Queensland

Peter Cranston, Chris Reid and **Ian Reid** visited from Canberra to demonstrate their new databasing program 'Biolink' to a very interested audience from UQ, QM and DPI. This new program allows cross-linking between detailed mapping, references, specimen data and identification at the touch of a button.

Steve Marshall from Guelph University, Canada, who specialises in sphaerocerid flies, visited the UQ and QM insect collections while on a collecting trip through eastern Australia.

CulicID, the interactive Key to Adult Female Mosquitoes of the Torres Islands and North Queensland, was launched in April. This impressive LucID key, attracting international interest, was produced through the efforts of **Des Foley, Catherine Bryant** and many others.

Gimme Walter has 6 months study leave in Holland, where he will be working with **Rob Hengeveld**. They hope to make substantial progress in writing a book about autecological theory, an issue on which they have been collaborating for some time.

Patrice Bouchard, David Yeates and **Shaun Winterton** were joined on a collecting trip to New Guinea in July by **Andrew Atkins** from Newcastle University and **Gary Dodson** from Ball State University, Indiana. Their time in PNG was assisted with the logistic support of the PNG National Agricultural Research Institute. **Solomon Balagawi** of NARI travelled with them and acted as a local guide. Apparently the trip was enjoyable but was disappointing with respect to catches of the antler flies *Phytalmia* which were the major focus of the trip.

Paul Cunningham is working on *Helicoverpa* oviposition behaviour at UQ on a Leverhulme Postdoctoral Fellowship from Edinburgh University, Scotland.

Army Malaria Institute (AMI)

During the last week of June several members of the institute attended the Australian Tropical Health and Nutrition Conference in Brisbane. However, due to illness, ironically a case of vivax malaria, **Steve Frances** was unable to attend the conference and present a paper on recent work conducted in Papua New Guinea.

The section continues its longitudinal study of arbovirus vectors at Shoalwater Bay Training Area, north of Rockhampton. **Sarah Russell** got away from DNA extraction and PCR analysis to conduct the June and July surveys at SWBTA filling in for some of our military members who are still involved with Operation Belisi in Bougainville.

Recent visitors to the institute included **Margaret Spencer** and **Terry Spencer**, from Tenterfield, who took time out from the ATHN Conference to visit Enoggera for the first time. **Nigel Beebe**, from the University of Technology, Sydney, visited for 10 days in late May to continue work with **Bob Cooper** on the identification of anopheline mosquitoes from PNG.

Queensland Institute of Medical Research

Brian Kay attended the Pacific Science Congress in Sydney from 4-9 July. Brian discussed community-based and biological control programs against *Aedes aegypti* in Vietnam.

The Australian Tropical Health & Nutrition Conference on 'Health for all in the New Millennium' was held at QIMR from 30 June - 2 July. **Louise Kelly-Hope** from the MCL lab discussed the geographical and temporal risk of mosquito-borne epidemic polyarthritis in Queensland.

Angie Capper has commenced PhD studies with **Michael Brown** (QIMR) and **Jack Greenwood** (UQ Zoology & Entomology Dept). Angie, who hails from Cheshire UK, was awarded an international student scholarship. Using her background in environmental toxicology and biomedical science, Angie will investigate the chronic sub-lethal effects of insecticides used for mosquito control (particularly s-methoprene) on non-target fauna.

The date has been set for the next Arbovirus Research in Australia-8/Mosquito Control Association of Australia-4 Conference. The conference will be held from 3-7 July, 2000, at Couran Cove Ecotourism Resort, South Stradbroke Island, Gold Coast, Queensland. Registration forms are available from **Michael Brown**, QIMR, PO Royal Brisbane Hospital, Queensland 4029 (Phone: [07] 3362-0352, email: **michaeBr@qimr.edu.au**).

Australian School of Environmental Studies
Griffith University

Heather Proctor has completed a study on the invertebrates inhabiting ponds formed from disused mine pits but is still sorting stream bugs to answer the question "Should anyone bother to identify mites in stream macroinvertebrate surveys?" Her honours student **Natasha Witting** is permanently affixed to her sorting-chair as she picks through thousands of invertebrates from streams in the Mary River catchment. Natasha is investigating two questions: what is the role of fine- vs. coarse-scale abiotic characteristics in structuring invertebrate assemblages?; and, does recovery time from physical disturbance differ among streams with different abiotic characteristic? **Heather Proctor** and **Dave Walter** (Uni Qld) are extremely pleased to note that their book "Mites: Ecology, Evolution and Behaviour" is being widely advertised by Uni NSW Press but are a bit concerned that neither they nor anyone else seems to have seen a hard copy!

The **Roger Kitching** biodiversity lab has successfully completed another 1 hectare rainforest plot study, this one just behind Madang, PNG. Roger and research assistant **Karen Hurley** put in time in the field but the record for stamina goes to **Guy Vickerman** who was in the field for nearly two months. The biodiversity assessment went extremely well and the group has returned singing the praises of the PNG Nationals who worked with them.

The Fruit Fly lab continues to plough on. Trips to Vietnam and Bhutan have kept **Dick Drew** and **Meredith Romig** busy while **Tony Clarke** and **Danny McGuire** spent an interesting fortnight in PNG earlier in the year with a workshop in Lae coming up in August. At the beginning of July, the group hosted a National Fruit Fly planning meeting and training workshop with participants from around Australia, NZ and the South Pacific. **Narelle Power** has joined the group as a new PhD student. After some initial considerations, we seem to be settling into a topic. Narelle will work on the ecology and host plant relationships of native tephritine species that feed in the flower heads of *Senecio* species. Although some work has been done on the group overseas, the biology of Australia's native tephritines is almost entirely unknown and the project promises to be a trip into the unknown.

Alan Fletcher Research Station
Qld Department of Natural Resources.

Graham Donnelly visited **Warea Orapa** and **Ingu Bofeng**, National Agricultural Research Institute, Lae, Papua New Guinea to inspect the ACIAR Siam weed biocontrol project. Graham and Warea traveled to Vanimo to release *Paracheutes pseudoinsulata* on Siam weed.

Rachel McFadyen and **Michael Day** attended the X International Biological Control of Weeds Conference in Montana, USA. Michael then travelled to Guatemala and Mexico with **Stefan Neser** of Plant Protection Research Institute, South Africa looking for potential agents of *Lantana camara*. While in Mexico, they also discussed future collaborative work using the CSIRO Mexican Field Station with **Tim Heard** and **Ricardo Segura**. **Allan Tomley, Tom Anderson, Trevor Armstrong** and **Graham Teakle** attended the NSW Biennial Noxious Weeds Conference in Ballina in July.

Tony CLARKE
Regional Councillor

Bureau of Sugar Experiment Stations

Recently appointed BSES entomologist **Mohamed Sallam** left Tully for a few weeks familiarisation at Meringa BSES near Cairns where he was under the guidance of the 'master' **Keith Chandler**. He and extension officer **Steve Garrard** are testing the effects of lures on populations of sugarcane weevil borer and resultant damage. This summer's high rainfall in the north has made experimental conditions very difficult. Sallam later went to Burdekin BSES to experience the 'horrors' of greyback canegrubs at close hand with **David Logan**.

Another recent appointment was **Warren Hunt** who finds himself IPM co-ordinator working out of BSES Mackay. His brief is to get growers trying IPM concepts throughout the Queensland and New South Wales industries. Main targets are canegrubs but rats, soldier flies and weevil borers loom large.

Peter Allsopp and gene jockies **Kerry Nutt** and **Grant Smith** from BSES Indooroopilly took out the prestigious (well in the sugar industry it is!!!) President's Medal at the recent meeting of the Australian Society of Sugar Cane Technologists. Their paper covered progress in the development of transgenic cane varieties with increased resistance to canegrubs. All work so far has been

laboratory or glasshouse based so the interest now is in how these lines will perform in the field. Permission from GMAC to grow them in the field is awaited.

QDPI

The GRDC Project "Heliothis management for IPM in grain crops' led by **David Murray** held its annual evaluation and planning meeting at Toowoomba on 15 - 16 July. To share the good news with the project staff involved were out of town visitors **Hugh Brier** and **Kristin Knight** (Kingaroy), **Martin Dillon** (CSIRO Narrabri) and **Bob Teakle** and **David Holdom** (Brisbane). A special segment focussed on developments with area wide management of heliothis and presenters included **Richard Sequeira** (Emerald), **Melina Miles** (Darling Downs) and **Simon Duffield** (CSIRO Griffith). **Wayne Rochester** and **Glenn Graham** (UQ Brisbane) presented information on their findings on spatial analysis and DNA microsatellites.

Invitees from around Australia with an interest in heliothis management attended a special presentation by **Ian Titmarsh** (Emerald) on the new Queensland Government Initiative "Supporting Green Industries - Combating Heliothis". Ian provided information on the structure of the initiative and the strengthening of collaborative links that are taking place. Also as part of this New Initiative project, the Farming Systems Institute has appointed Dr **Caroline Hauxwell** to the biopesticides entomologist position at the Indooroopilly laboratories in Brisbane. Caroline is from the United Kingdom (with a PhD on baculoviruses from Imperial College) and has spent extensive periods of time working in Central America, West Africa and Sri Lanka on pest management projects, especially focussing on insect pathogens. After arriving in Australia in October, Caroline will be involved in biopesticide and pathogen ecology research on cotton, grains and intensive vegetable crops in collaboration with existing QDPI research groups.

Frank Page (Applethorpe) has continued his IPM work in apples. He and **Peter Nimmo** have been conducting laboratory bioassays to determine the residual toxicity of various pesticides to the encyrtid wasp *Pseudaphycus maculipennis*, the exotic parasitoid released for the control of the grapevine mealybug in apples. They found most conventional insecticides were highly toxic to this parasite while insect growth regulators, miticides and fungicides were generally of low toxicity.

John Donaldson (Indooroopilly) was to have experienced both sides of training. Unfortunately training courses John was to have run in July had to be postponed so instead he headed off to the United States to attend two courses on agricultural acarology at Ohio State University.

The grains team of **Pat Collins** and **Greg Dalglish** (Indooroopilly) and **Graham White** (Toowoomba) travelled to Western Australia in early June to attend the National Working Party on Grain Protection. While in WA they visited **Rob Emery** and looked at grain storages on farms and at the new Cooperative Bulk Handling facility.

A swarm of entomologists including **Bronwyn Houlding** and **Brendan Nolan** (Gatton), **Iain Kay** (Bundaberg), **Brad Scholz** (Toowoomba), **John Brown** (Ayr), **Peter Room** (CSIRO, Brisbane), **Chris Monsour** (Bowen Crop Monitoring Services) and **Richard Llewellyn** (BioResources, Toowoomba), along with a few entomological camp followers, attended the second IPM in Sweet Corn Workshop at Bathurst in May. Interspersed among the discussions on heliothis and other beasts there were spins around the Mt Panorama circuit courtesy of friendly taxi and bus drivers and a visit to factories processing sweetcorn and other products. That the staff of the factories enthusiastically ate their products was either a tribute to the quality of the product (for example nuggets in the shape of koalas) or an indictment of their sense of taste.

Geoff Waite (Nambour), a member of the 'Better Berries' team, spoke on the challenges in developing and implementing IPM systems at the Berryfruit Conference in May at the Sunshine Coast. In July Geoff, **Dan Smith** (Nambour) and **Annice Lloyd** (Indooroopilly) all presented papers to the 2nd Custard Apple Conference, also at the Sunshine Coast. Geoff spoke about fruitspotting bugs, Dan mostly about yellow peach moth and Annice about fruit flies.

Bryan Cantrell reports that another mysteriously introduced insect has been found in Queensland. In late May a single specimen of an exotic bumble bee, collected in December 1997 at Buderim, was identified by **Glynn Maynard** (AQIS, Canberra) and colleagues as *Bombus vosnesenskii*, which is native to the west coast of North America and is one of a group of species being evaluated as crop pollinating agents there. A survey of the Buderim

area in June failed to find any evidence of the bee but further surveys will be carried out in spring. In the meantime, Queensland's ageing entomologists, wearily polishing their spectacles, can only be grateful that this beast is large enough to be seen without the aid of a powerful microscope.

Iain KAY
Regional Councillor

SOUTH AUSTRALIA

The University of Adelaide
Department of Applied and Molecular Ecology

Associate Professor **Jacques van Alphen** (Leiden University, The Netherlands) was the Distinguished Visiting Scientist in the Department this year. He spent part of July in the Department presenting four seminars on the behavioural ecology of parasitic wasps and biological control of cassava and mango mealybugs. While in Australia, Jacques and his family travelled to Queensland to collect *Asobara persimilis*, a parasitoid of *Drosophila melanogaster*, as a part of ongoing research on the evolution of life histories and foraging behaviour.

Two students from the national Institute of Agronomy Paris-Grignon visited **Mike Keller's** group from mid-May until late July. **Anne Offner** studied the effects of temperature on interactions between the braconid wasp *Cotesia rubecula* and its host, larval cabbage white butterfly. **Caroline Lejars** studied host discrimination in *Diadegma semiclausum*, a parasitoid of the diamondback moth.

Megan Leyson completed her Honours degree in which she elucidated the mating behaviour and mate-finding distance of the horehound plume moth. **Xin-geng Wang** has travelled to Gatton, Queensland where he will work with **John Duff** on the impact of natural enemies on the survival of immature diamondback moth as part of the ACIAR project on this pest.

Rick Roush and **Bruce Halliday** (CSIRO Entomology, Canberra), spent three weeks in South Africa looking for predators of the redlegged earth mite. Two promising predatory mites were discovered which could improve biological control of this important pest. While there, Rick got to see first hand several natural enemies of bridal creeper, boneseed, capeweed and soursob.

On 21 July, **Rick Roush**, **Paul Jupp**, and **Craig Clarke** helped organise the national launch of the release of the first biocontrol agent ever released against bridal creeper, the Bridal Creeper Leafhopper, an undescribed species of *Zygina*. Bridal creeper is South Australia's worst environmental weed and one of worst 20 Weeds of National Significance. **Mike Keller** prepared a stunning photograph of the leafhopper for the launch. Rick was interviewed by all four television networks, ABC country hour, 5AN in Adelaide and 2UE from Sydney. The rain held off just long enough for the launch to be a great success! This culminates work initiated by **John Scott** (CSIRO Entomology), and hopefully will reduce the impact of this devastating weed.

Craig Clarke has just about wrapped up his PhD project on climate matching with horehound plume moths and boneseed tip moths and in the process has established the tip moths at a few sites in the Adelaide hills and the plume moths at about 30 sites across South Australia. **Jeanine Baker** is well into her project using molecular techniques to investigate the effects of inbreeding and restricted founder populations on the establishment of plume moths.

Andy Austin recently spent three weeks in the US attending the Systematics and Evolution Conference at Madison, Wisconsin, then on to visit **Norman Johnson** at Ohio State University in Columbus. Norman's specialty is the evolution of parasitic wasps. He also spent some time with **Bob Wharton** at Texas A&M discussing a revision of gall-forming braconid wasps.

There have been numerous changes in **Andy Austin's** Systematics Laboratory of late. **Claire Stephens,** a recent honours graduate from ANU, has begun a PhD looking at the effect weeds have on invertebrate biodiversity. Her research is supported by the CRC for Weed Management Systems and supervised by **Andy Austin** and **Hugh Possingham**. **Marta Kasper,** an honours graduate in Science from Flinders University, has joined the University of Adelaide European wasp research team as a PhD student. Her project will focus on the nesting and feeding biology of the European wasp in South Australia, with the view to determining what regulates wasp populations in Mediterranean environments and whether they can be predicted from one year to the next. **Andrew Reeson**, who did a PhD in insect pathology at the Institute of Virology and Environmental Microbiology in Oxford, is collaborating on a major research project examining the potential of

pathogens and other organisms as biological control agents of European wasp in Australia. **My-my Huynh** and **Nicholas Stevens** have both completed their Honours degrees with Andy Austin. My-my has commenced work with **Greg Baker** in SARDI and Nicholas has joined **Andy Austin** and **John Jennings** as a Technical Officer. **Travis Gooch** and **Jason Cody** have both begun their honours programs studying aspects of mound spring management. **Mohammed Iqbal** is returning from Pakistan as a post doctoral fellow and will be conducting research into the evolution and systematics of braconid wasps. He will also be assisting **Andy Austin** and **John Jennings** in developing LucID keys for the identification of hymenopteran families.

A visitor to the Systematics Lab has been **Lauri Kaila** who is studying the phylogeny, taxonomy and biogeography of the moth family Elachistidae (Lepidoptera, Gelechioidea). He is concentrating on the taxonomy, classification and biology of the Australian species. In the long run he is attempting to study the higher classification of the superfamily. Lauri is a curator of Microlepidoptera in the Finnish Museum of Natural History in Helsinki. For 1999, he has a post-doctoral fellowship from the Finnish Academy of Science, and is based in ANIC, CSIRO Entomology, Canberra.

Gary Taylor departed SA's wintry conditions on the shortest day of the year to survey the psyllid fauna on mistletoe through central NSW, en route to Brisbane to meet with **Robin Gibin-Davis** from the University of Florida and nematologist **Kerrie Davies**. All will undertake field work on gall flies and nematodes on *Melaleuca*, along with **John Goolsby, Matthew Purcell** and **Jeff Makinson** at the USDA Biocontrol Labs in Indooroopilly.

SARDI Entomology

Greg Baker visited Switzerland for a week in April to attend an international meeting which was a forum for the latest developments in the management of insecticide resistance around the world. **Ken Henry, Ross Stanger** and **Dennis Hopkins** attended an annual workshop in Melbourne in late May to discuss the latest developments in the project on biological control of Paterson's curse. The crown boring weevil is now well established at several sites in SA and will be field collected from these sites in the future and moved to new release areas.

There are two new faces in the Entomology Unit. **Angela Lush**, an Adelaide graduate, has joined the Unit to work with **Dennis Hopkins** on a snail problem in citrus. A small brown snail has contaminated shipments of oranges to the USA market and is posing a serious threat to this market. Supported by funds from the Citrus Market Development Group, Angela will study the behaviour and ecology of these snails in citrus orchards and develop a management strategy for growers to carry out. **My-my Huynh** has commenced employment with **Greg Baker** to survey mealybugs in citrus throughout SE Australia. The results from these surveys will hopefully clarify some problems identified by USA quarantine officials and free up the ease of shipment of oranges into this market in the future.

Gabriella Caon attended a two-day course in Brisbane in early July to be trained in the identification of adult fruit flies. **Ken Henry** surveyed Kangaroo Island in late June and confirmed that the moth released for the biological control of dock has established well on the island.

SA Museum

An exhibition 'Where have all the butterflies gone?' being coordinated by **Jan Forrest**, is being mounted in collaboration with Butterfly Conservation SA Inc. It will be opening at Carrick Hill on 1 Sep 1999 and will return to the SA Museum in March 2000 with the reopening of the Museum following extensive redevelopment work.

Archie Macarthur spent some time in the Kimberleys collecting ants and **Eric Matthews** has begun work on Vol 8 of the 'Beetles of SA' series.

Lynette Queale has been looking at the faeces of Ampurta (collected by colleagues from Biological Survey, DEHAA) a newly recognised species of Mulgara (*Dasycercus cristicauda*), a small marsupial carnivore, to determine what they have been eating in the Simpson Desert. Many of the invertebrate remains are able to be identified to family/genus at least and range from scorpions to caterpillars. There are also bones of lizards and native mice. They basically eat anything!

Australian Water Quality Centre

Chris Madden reports the Monitoring River Health team has just finished field work for autumn surveying. The notable area visited this year was to the north-west of Lake Eyre and ten sites on the Neales River, Macumba River, Margaret River and

Mabel Creek systems. The results from the first four surveys in 1994-95 have now been summarised in some pretty maps for the State Water Plan. The whole macroinvertebrate group has been involved in consulting work for Onkaparinga River Catchment Water Management Plan. This is just one example of how the invertebrate data is being used for applications other than biomonitoring. For some SA rivers the only biological data that exist are from macroinvertebrate surveys. **Rob Walsh** left at the end of July to take up a new position at DEHAA in Adelaide as a Senior Scientist in Wetlands Management.

John JENNINGS
Regional Councillor Designate

VICTORIA

IPM Technologies P/L

Regular monitoring of some vegetable and glasshouse crops has kept **Paul Horne** and **Cindy Edward** busy even through winter. **Robin Coy** gave us a tour through her new mite-breeding facility and we will meet up with all the members of the Australasian Biological Control Association in Loxton at the end of July. **Martina Bernard** from La Trobe Uni came out with us on one of our monitoring days to see the approach being taken. Interest in the potato moth parasite *Orgilus lepidus* has increased, so much so that **Jamie Seymour** and **Mike Hughes** from north Queensland came down to Melbourne in the depths of winter to discuss breeding methods. **Neil Hives** from Ballarat and **Andrew Heighton** from SA also came to the meeting.

DeAnn GLENN
Fiona CLISSOLD
Regional Councillors

OVERSEAS NEWS

PAPUA NEW GUINEA

Entomologists

Lastus Kuniata (Ramu Sugar Ltd) submitted his PhD dissertation on Stemborers of Sugarcane to the University of Queensland, Brisbane, in March/April 1999.

Bob Prior retired from the Headship of Entomology Section at the Cocoa and Coconut Research Institute (CCRI) Keravat and was replaced by **Dr Samson Laup**. Bob served as an entomologist with the Department of Agriculture and Livestock for about 20 years before serving CCRI for six years. His notable contributions include the biological control of *Sexava* on oil palm in PNG.

Ray Kumar assumed the editorship of *Science in New Guinea*. He continues to be the Honorary Consultant Editor of *PNG Journal of Agriculture, Forestry and Fisheries* (PNG JAFF) and *Harvest*. All these journals are facing critical financial problems.

Entomological Research

CCRI has had mid-term research reviews from 20-21 May 1999. Discussions centred around control of *Scapanes* and *Rhyncophorus bilineatus* (Black Palm Weevil) in coconuts and *Pantorhytes* weevils in Cocoa. **Samson Laup** has established an entomopathogenic laboratory at CCRI to continue his work on the entomopathogens of mirids. Insect pollination of cocoa is also progressing, though slowly. The use of repellents against *Scapanes* and its control using pheromone dispensers is also in progress.

Publications

A guide to the genera of stick and leaf insects (Insecta: Phasmida) of New Guinea and the surrounding islands (*Science in New Guinea* **24**(2): 55-114, Dec. 1998) by H.C.M. Van Herwaarden, Venneweg 29, 50511 BN Goirle, The Netherlands, is now available. For an electronic guide to the genera of phasmids of new Guinea, see: http://www.hvision.nl/-herwaar/phasmida.htm. The next issue of PNGJAFF will have a couple of articles of entomological interest.

Ray KUMAR
Overseas Correspondent (PNG)

ELECTRONIC NEWS

APLC Website

The Australian Plague Locust Commission has just released a web site which can be found at:
http://www.affa.gov.au/aplc

It contains information about the role of the APLC, how we forecast, monitor and control locusts, the biology of the three main pest species and research and extension activities as well as issues of the monthly Locust Bulletin. There is also a report form which people can use to tell us about

any locusts they have seen in their area. We would appreciate any feedback from Aust. ent. soc. members on the usefulness of the site and on how it may be improved.

Paul WALKER
APLC, AFFA

An Illustrated Catalog of Orthoptera
CD ROM for Macintosh and Windows

It is our pleasure to notify you that a CD ROM "An Illustrated Catalog of Orthoptera. Vol. I. Tettigonioidea (Katydids or bush-crickets)" is now available. This CD contains a complete taxonomic and synonymic database of all species of Tettigonioidea of the world described until 1998. In addition to such data as full synonymy, bibliographic references, type locality and type depositories, this unique CD includes nearly 7,000 high quality color images of specimens, mostly of actual types, photographed in major museum collections in Europe, North America and Australia. The taxonomic database has been designed in such a way that even users with little or no previous computer experience will find it easy to use, without sacrificing any of the power and flexibility of its fully relational design.

WHO IS IT FOR?

Although designed primarily for entomologists interested in orthopteroid insects, this CD ROM is also an indispensable tool for insect collection managers and curators. It provides a quick way to find currently accepted names of katydids or bush-crickets as well as synonyms and literature references for these insects in your collection. In addition, thousands of images in the database will help you identify your specimens. A label-making capability will also allow you to effortlessly print pin or tray labels for species and genera of Tettigonioidea. But you don't need to be a professional entomologist or a collection curator to find the "Catalog" useful. Casual naturalists all over the world can use it to find out what species of bush-crickets have been described from their country or region, find information on references describing their local species in detail or simply browse the images and learn about the amazing variety of life-forms of katydids.

ORDERING THE CD ROM

The "Illustrated Catalog of Orthoptera" has been published by the Orthopterists' Society at the Academy of Natural Sciences of Philadelphia (ISBN 1-929014-00-7). To order, please send a cheque (drawn on an American bank) or money order to:

Academy of Natural Sciences of Philadelphia
Department of Entomology, attn.: Daniel Otte
1900 Benjamin Franklin Parkway
Philadelphia, PA 19103-1195, USA

PRICING

Regular price USD $95
Members of the Orthopterists' Society USD $75
Students* USD $55

*students must provide a photocopy of a valid student identification document

Please visit our web site for more information:
http://viceroy.eeb.uconn.edu/cd

Piotr Naskrecki and Daniel Otte

COMING EVENTS

Australian Entomological Society 30 AGM and Scientific Conference

28 September - 2 October 1999
Australian National University, Canberra

The 30th AGM and Scientific Conference of the Australian Entomological Society will be held at the Australian National University, Canberra from Tuesday 28 September to Saturday 2 October 1999.

The theme of the conference is "Insects in the Australian Environment". To that end, a number of symposia and sessions is planned including:

- Insects of the arid zone
- Insects as biological indicators
- Insect conservation
- Exotic incursions and quarantine
- Biological control
- Entotainment
- General entomology

Please contact **Glynn Maynard** with further suggestions or enquiries at:
glynn.maynard@aqis.gov.au
The conference is being organised by Australian Convention and Travel Services Pty Ltd. For general enquiries, please contact:
Anette Palm
Telephone: (02) 6257 3299
Facsimile: (02) 6257 3256
Email: conf@ausconvservices.com.au
Website: http://www.ausconvservices.com.au
Glynn MAYNARD
Convenor, 30th AGM and Scientific Conference

Australian Entomological Society
31st AGM and Scientific Conference
June 2000
DARWIN, NT

Next year's annual meeting of the Society will be in Darwin during the last week of June. The organizing committee is seeking expressions of interest from potential symposium convenors. Symposia relating to the monsoonal tropics are especially invited but any topic is welcome. Potential symposium convenors will be responsible for soliciting papers and chairing their session and are asked to register their interest with symposium organiser Kristy Campbell at:
kcampbell@norgate.com.au.
Enquiries can be directed to:
Alan.Andersen@terc.csiro.au

Announcing
A One-Day Conference

Using Biodiversity to Monitor the Environment

at
Key Centre for Biodiversity and Bioresources, Macquarie University, North Ryde NSW 2109
21 September, 1999
10.00am – 4.00pm

Cost: $225 (registration, morning and afternoon tea and lunch included)

Introducing ***BioTrack***, the biodiversity specimen and data management system developed by the Key Centre. Topics to be covered include: rapid biodiversity assessment for monitoring, ***BioTrack*** features and applications, relational databases, data output, management and interpretation.

The conference is aimed at environmental and natural resource managers and consultants, conservationists, project officers, teachers and students interested in terrestrial, freshwater or marine environments.

For further information and registration form:
Robyn Delves
Phone: 02 9850 8153
Email: rdelves@rna.bio.mq.edu.au
Websites: http://biotrack.mq.edu.au and http://www.bio.mq.edu.au/kcbb

---

MANAGEMENT OF PUBLIC HEALTH PESTS
1999 CERIT Industry Briefing Symposium
Co-ordinated by
CERIT,
Unisearch, University of New South Wales

Speakers will cover essentials relating to management of Public Health Pests focussing on current issues and trends. Recognised experts will aim to provide balanced independent viewpoints. Topics will include management of flies, mosquitoes, cockroaches, vertebrate pests and other nuisance pests in commercial and domestic situations.

Details:
Thursday 30 September 1999
8.30 am to 6.00 pm at
The University of New South Wales
(Kensington Campus, Sydney)

Cost:
$300 per attendee or
'Early Bird' registration! $270 (by 13 September 1999)

For registration or further information please contact:
CERIT Biological Science
University of New South Wales
SYDNEY NSW 2052
Phone: (02) 9385 0344
Fax: (02) 9385 0346
Email: CERIT@unsw.edu.au

UNE ASIA CENTRE
INTERNATIONAL CONFERENCE
Where Worlds Collide:

Faunal and floral migrations and evolution in SE Asia-Australasia
to be held at
The University of New England, Armidale, Australia
29 November-1 December, 1999

Details: *Myrmecia* **35**(2): 19-21
Contact:
A/Prof Ian Metcalfe
Convenor, Where Worlds Collide Conference
Asia Centre
University of New England
Armidale NSW 2351
AUSTRALIA
Tel & Fax: 61-2-67733934
Email: imetcalf@metz.une.edu.au

DAMPIER 300
Biodiversity in Australia 1699-1999 and beyond

6 to 10 December 1999
Alexander Library Theatre, Perth Cultural Centre, Francis Street
Perth, Western Australia

Organisers:
Australian Systematic Botany Society
Society of Australian Systematic Biologists
Invertebrate Biodiversity and Conservation
Details: *Myrmecia* **35**(2): 21
For further information and for a registration brochure, please contact:
Alex George, Kardinya
ph: (08) 9337 1655
fax: (08) 9337 9404
email: alextris@opera.iinet.net.au
Mark Harvey, Western Australian Museum
ph: (08) 9427 2737
fax: (08)9427 2882
email: mark.harvey@museum.wa.gov.au
Jonathan Majer, Curtin University of Technology
ph: (08) 9266 7041
fax:(08) 9266 2495
email: imajerj@info.curtin.edu.au

We are pleased to announce that the website for the conference has been updated. It now includes the standard array of information, including registration, a down-loadable registration form, accommodation details, and a call for papers. The site can be found at:
http://www.museum.wa.gov.au/Dampier300/Dampier300.htm
We look forward to your registrations and abstracts, and hope to see you all over here in Perth in December.

Mark S. HARVEY

2ND INTERNATIONAL LEPIDOPTERIST CONFERENCE OF AFRICA

Lepidoptera: Ambassadors of Biodiversity
4-6 November 1999
Old Mutual Conference and Exhibition Centre
Kirstenbosch National Botanic Garden
Capetown, RSA

Organisers:
African Butterfly Research Institute, Kenya
The Lepidopterists' Society of Africa

This conference is geared to stimulate those interested in the study of Lepidoptera and their complex biotic interactions. The format will consist of well known international and local speakers, a keynote address, lectures, discussion groups and net-working, poster displays, exhibits, a photographic competition and a guided tour of the conservatory and botanic garden.

Conference Organiser:
Jenny Heath
209 Ringwood Drive
Pinelands 7405
Republic of South Africa
Tel/Fax: 27 21 531 6840
Email: aheath@mweb.co.za
URL: http://www-tm.up.ac.za/lepidop/lepiconf.htm

Arbovirus Research in Australia-8
Mosquito Control Association of Australia-4
Conference
3-7 July 2000
Couran Cove Ecotourism Resort
South Stradbroke Island
Gold Coast, Queensland
Registration forms are available from:
Michael Brown
QIMR,
PO Royal Brisbane Hospital, Qld 4029
Phone: [07] 3362-0352
Email: **michaeBr@qimr.edu.au**.

10TH INTERNATIONAL SYMPOSIUM ON TRICHOPTERA
Potsdam, Germany
July 30 - August 5, 2000

Details and application form can be obtained by writing to:
Dr Arturs Neboiss
Dept of Entomology
Museum of Victoria
71 Victoria Crescent
Abbotsford, Vic 3067

SOUTHERN CONNECTION III
Lincoln University, New Zealand
16-22 January 2000
Details: *Myrmecia* **35**(2): 22
http://www.lincoln.ac.nz/cted/south/
If you have any particular questions re Southern Connection III, please contact:
Helen Shrewsbury
Centre for Continuing Education
Lincoln University, Canterbury, NZ
Tel: +(64)(3) 325 2811 ext 8955
Email: shrewsbh@tui.lincoln.ac.nz

SPRAY OILS BEYOND 2000

Sustainable Pest and Disease Management
Sydney, Australia
25-29 October 1999
University of Western Sydney, Hawkesbury
and
University of Florida
Details: *Myrmecia* **34**(4): 33
First Notice and Call for Papers available from:
Alison Frost
Conference Secretary
Hawkesbury Technologies Ltd
UWS Hawkesbury
PO Box 415
Richmond, NSW 2753
Ph: (02) 4570 1690
Fax: (02) 4570 1520
Email: a.frost@uws.edu.au

XXI International Congress of Entomology
Iguassu Falls, Brazil
20-26 August 2000
Entomologists Preserving Biodiversity
Details: *Myrmecia* **34**(1): 30-31.

CALL FOR PAPERS

We are now calling for papers for the XXI International Congress of Entomology. The call will be open from January 1st to December 31st, 1999. Please refer to our homepage (http://www.embrapa.br/ice) for instructions to submit abstracts.

The organising committee should reply 15-30 days after you sent the abstracts. In case of no reply, please call us to verify whether your abstract was received.

If you need more information, please call ice@sercomtel.com.br

Everything you could possibly want to know about the next ICE is available on the Congress

Web Page **http://www.embrapa.br/ice**, including details of accommodation, delegates, services, associated activities, administrative matters, sponsors, symposia, etc.

NOTE: As soon as the International Convenors send us the final program for each session, we will be able to release the second announcement of the XXI ICE.

Please, be sure you have updated your postal address on our homepage to receive it.

THE NEW PANORAMA OF ANIMAL EVOLUTION "
The New (XVIII) International Congress of Zoology
Athens, Greece
28 August-2 September. 2000

Details: ***Myrmecia*** **34(3): 24**
Contact:
Dr Rosa Polymeni
University of Athens
Department of Biology
Section of Zoology and Marine Biology
15784 Athens, Greece.
Tel. 30-1-7264364
Fax. 30-1-7284604
Email. rpolyme@biology.db.uoa.gr
URL http://www.york.biosis,org/zrdocs/new_icz.

7th AUSTRALASIAN CONFERENCE ON GRASSLAND INVERTEBRATE ECOLOGY
Perth, Western Australia
September 1999
Details: *Myrmecia* **34**(2): 19
Further information:
John Matthiessen
CSIRO Entomology
Private Bag PO
Wembley
Western Australia 6014
Phone: 08 9333 6641
Fax: 08 9333 6646
E-mail: johnm@ccmar.csiro.au
Information also available at:
http://www.agric.wa.gov.au:7000/Ento/ACGIE/

ECONNECT COURSES

1. Presentation Skills Workshop - Designed especially for Scientists - LEARN HOW TO MAKE A TALK WORK FOR YOU AND THE AUDIENCE
Presentation Skills Workshop Dates - 1999
Brisbane - September 13-14
Perth - October (Date to be confirmed)
2. Media Skills Workshops - Designed especially for scientists - LEARN HOW TO MAKE THE MEDIA WORK FOR YOU
Media Skills Workshop Dates - 1999
Brisbane - September 16-17
Perth - October (Date to be confirmed)
Details: Myrmecia 35(1): 23-24
Contact:
Jenni Metcalfe
ECONNECT
PO Box 734
South Brisbane BC QLD 4101
Phone (07) 3846 7111
Fax (07) 3846 7144
E-mail jenni@econnect.com.au

NOTICES

A Native Bee Field Guide
Can you help?

A new field guide series on native bees is being researched by the Australian Native Bee Research Centre in collaboration with **Michael Batley, Martyn Robinson** and **Brian Faulkner**. Designed for the bushwalker, native plant enthusiast or gardener, these will be the first-ever, simple yet comprehensive guides to Australian native bees. Part 1 will deal with the Sydney region while subsequent parts will treat the Brisbane and Melbourne areas.

We would like to contact anyone who would like to assist with this interesting project. You might be able to help with field trials of the drafts or you might already have collections of native bees from these areas.

Please write to
Anne Dollin,
ANBRC,
PO Box 74,
North Richmond NSW 2754 or
email: anbrc@zeta.org.au

Australian Entomological Society CALL FOR NOMINATION/ RENOMINATION OF OFFICERS & REGIONAL COUNCILLORS

The following Offices will fall vacant at the Society's 30th AGM in September 1999. Nominations for election should be made on the form provided and should reach the Secretary no later than 1 September 1999.

Vacant Office	Present Incumbent
(Executive positions are appointed for periods of two years and incumbents are eligible for re-election)	
News Bulletin Editor	Dr M.J. Fletcher
Regional Councillors	
(Regional Councillors are eligible for re-election for up to three years only)	
Queensland	*Mr I.R. Kay
	Dr Tony Clarke
	Dr Jamie Seymour
New South Wales	(vacant)
	*Dr G.M. Gurr
	Mr Cameron Webb
Australian Capital Territory	*Dr M. Matthews
	Dr W. Odgers
Victoria	Ms D. Glenn
	Ms F. Clissold
South Australia	*Dr G.S. Taylor
	(vacant)
Tasmania	*Dr J. Elek
Western Australia	*Ms F.A. Berlandier
Northern Territory	*Mr G. Bellis

*** not eligible for re-election**

Representative Councillors	
(Representative Councillors are appointed by the affiliated Societies. There are no restrictions on terms served in this capacity)	
Ento. Society of Queensland	Dr J. King
Ento. Society of NSW	Dr A.D. Clift
Ento. Society of Victoria	Mr R. MacPherson

Australian Entomological Society 30th Annual General Meeting 29 September 1999 Canberra

The Society's 30th Annual General Meeting will be held on 29 September 1999.

A provisional agenda for the AGM appears below.

Provisional Agenda
30th Annual General Meeting
Canberra, ACT
29 September 1999

1. Opening and General Announcements
2. Announcements of Proxies and Apologies
3. Deaths of Members recorded since 29th AGM
4. Minutes of 29th AGM
5. Business Arising out of the Minutes of 29th AGM
6. Executive Annual Report, including Reports of Vice-President, Treasurer, Business Manager, Chief Editor and Editor of News Bulletin
7. Report of the Conservation Committee
8. Competitions and Awards
9. Business arising from the 58th Council Meeting, Canberra
10. Announcements of Office-bearers and Councillors for 1999-2000
11. Report of the Organising Committee, 30th Annual General Meeting and Scientific Conference
12. Report of the Organising Committee, 31st Annual General Meeting and Scientific Conference
13. Other business
    The future format of the News Bulletin
14. Close

Australian Entomological Society Inc.

APPOINTMENT OF PROXIES

I, ...

of . . . . . .

. . . . . .

being a member of the above-named Society,

hereby appoint . . . . . .

of . . . . . .

. . . . . .

as my proxy to vote for me on my behalf at the Council Meeting, Annual or Special General Meeting, as the case may be, of the Society, to be held during 28 September - 2 October 1999, and at any adjournment thereof.

Signed this . . . . . .

day of . . . . . 19 . . .

Signature . . . . . .

(A photocopy of this form may be used)

Australian Entomological Society Inc.

NOMINATION OF OFFICER OR COUNCILLOR

I nominate . . . . . .

for election to the office of . . . . . .

. . . . . .

Name of nominator . . . . . .

Signature . . . . . .

Date . . . . . .

I second this nomination

Name of seconder . . . . . .

Signature . . . . . .

Date . . . . . .

I accept this nomination*

Signature . . . . . .

Date . . . . . .

* The nominee is requested to attach a typed statement, not exceeding 300 words, which includes the following: professional qualifications, address, institution, position held, fields of entomological interest, previous offices or appointments held in the Australian Entomological Society, any other information which may be of interest to members.

(A photocopy of this form may be used)

Please send all nominations to Dr David Evans Walter, Dept Entomology, The University of Queensland, St Lucia, Qld 4072 before **1 September 1999.**

The Australian Entomological Society Inc.

INSECT ILLUSTRATION COMPETITION

The Australian Entomological Society invites previously unpublished and undisplayed entries to this competition to be judged and displayed at the Society's Annual Scientific Conference to be held in Canberra 28 September - 2 October 1999.

Illustrations of an insect, arachnid or myriapod will be accepted.

Categories will be:

- Colour Illustration
- Black & White Illustration
- Colour Photography
- Black & White Photography (including SEM)

Maximum entries: three per person

Entries should be mounted and brought/delivered to the AGM in Canberra. All proposing to enter should notify:

Anette Palm
A.C.T.S.
Ph (02) 6257 3299
Fax (02) 6257 3256
email: conf@ausconvservices.com.au

at least a week before the meeting. This is to ensure that sufficient boards are available for mounting.

Illustrations should not exceed 21 x 30 cm.
Photos should not exceed 20 x 25 cm.

EACH ENTRY MUST HAVE THE FOLLOWING INFORMATION ON THE BACK:

Name and Address of entrant
Category of entry
Title of the entry
Scientific Name of the organism illustrated (if known)

THE AUSTRALIAN ENTOMOLOGICAL SOCIETY INC.

FORM OF NOMINATION FOR MEMBERSHIP

To be returned to:
Dr D.E. Walter, AES Secretary, c/o Dept. of Entomology
University of Queensland, QLD 4072

We the undersigned

Proposer: ....
(print name here) (signature)

Seconder: ....
(print name here) (signature)

being financial members of the Society, propose the following for membership of The Australian Entomological Society Inc.:

Title .. Initials .. Given Name ..... Family Name .....

of (Address): .....

.....

Tel: ..... Fax: .....

Email: ..... Degrees, etc: .....

Occupation or Appointment: .....

Interests, experience and publications in entomology for publication in the News Bulletin *Myrmecia* (please attach brief resumé):

I accept nomination and undertake if elected to abide by the rules of the Society and to pay annual subscriptions by the date prescribed.

Signature: ..... **Date:** .....

For **1999**, new student/retired members - $25.00; new full members - $55.00. **Payment with nomination required.** (NB. These rates only apply for new memberships.

.....

(EXECUTIVE USE ONLY)

Nom. received: ..... Nom. considered at meeting: .....

Payment received: ..... Elected at meeting: .....

Membership type: ..... Applicant advised: .....

REGIONAL COUNCILLORS

Queensland
Mr I.R. Kay
Qld Dept of Primary Industries
Bundaberg Research Station
MS 108 Ashfield Rd
BUNDABERG Qld 4670
Ph (07) 71556244
Fax (07) 71556129
Email: kayi@dpi.qld.gov.au

Dr Tony Clarke,
Dept. of Entomology
University of Queensland
St. Lucia Q 4072,
ph (07) 3365 7918

Dr Jamie Seymour
James Cook University
Cairns Q 4870
ph (07) 4042 1208
jamie.seymour@jcu.edu.au

New South Wales
<vacant>

Dr G.M. Gurr
Orange Agricultural College
Leeds Parade
ORANGE NSW 2800
Ph (02) 63605551
Fax (02) 63605590
Email:
geoff.gurr@oac.usyd.edu.au

Mr Cameron Webb
Dept of Medical Entomology
Westmead Hospital
Westmead NSW 2145
Ph (02) 9633 7265
Fax (02) 9633 5314
Email: cameronw@cidm.wsahs.nsw.gov.au

Australian Capital Territory
Dr M. Matthews
CSIRO Entomology
GPO Box 1700
CANBERRA ACT 2601
Ph (02) 6246 4281
Fax (02) 6246 4264
Email:
marcus.matthews@ento.csiro.au

Dr Wendy Odgers
AQIS, AFFA
GPO Box 858
Canberra ACT 2601
Ph (02) 6272 5322
Fax (02) 6272 3307
E-mail:
wendy.odgers@aqis.gov.au

Victoria
MS DeAnn Glenn
Inst. Horticultural Development
Private Bag 15
South Eastern Mail Centre
Vic 3176
Ph (03) 9210 9222
Fax (03) 9800 3521
Email:
glennd@knoxy.agvic.gov.au

Ms F. Clissold
Dept Biological Sciences
Monash University,
Clayton Vic 3168
Ph (03) 9905 5631
Fax (03) 9905 5613
Email:fiona.clissold@sci.monash.edu.au

South Australia
Dr G.S. Taylor
Dept of Applied & Molecular Ecology
Waite Campus
University of Adelaide
PO GLEN OSMOND SA 5064
Ph (08) 8303 7264
Fax (08) 8379 4095
Email:
gtaylor@waite.adelaide.edu.au

Tasmania
Dr J. Elek
Forestry Tasmania
GPO Box 207B
HOBART Tas 7001
Ph 036 2338220
Email jae@forestry.tas.gov.au

Western Australia
Ms F.A. Berlandier
Agriculture Western Australia
Locked Bag No 4,
Bentley Delivery Centre,
WA 6983
Ph: 61 8 93683249
Fax: 61 8 93683223
email:
fberlandier@agric.wa.gov.au

Northern Territory
Mr G. Bellis
NT DPIF
PO Box 79
BERRIMAH NT 0828
Ph (08) 8999 2345
Fax (08) 8999 2015
Email
Glenn.Bellis@DPIF.nt.gov.au

REPRESENTATIVE COUNCILLORS

Entomological Society of Queensland
Dr J. King
QDPI Forestry Service
PO Box 631
Indooroopilly Q 4068
Ph (07) 3877 9716
Fax (07) 3371 2217

Entomological Society of New South Wales
Dr A.D. Clift
Dept of Crop Sciences
University of Sydney NSW 2006
Ph (02) 9351 2938
Fax (02) 9351 6928
Email: clifta@agric.usyd.edu.au

Entomological Society of Victoria
Mr David Meehan
19 Kardella Lane
Mount Eliza VIC 3930
(03) 9787 1341. (home)

OS CORRESPONDENTS

Ms O.R. Green
40 Preston Ave
Henderson
AUCKLAND 8
NEW ZEALAND
Greeno@lynfield.mqm.govt.nz

Prof. R. Kumar
Biology Dept, UPNG
Box 320, University P.O.
National Capital District
PAPUA NEW GUINEA

Dr M.W.L. Crosland
Biology Dept
Chinese Univ. of Hong Kong
SHATIN NT
HONG KONG
Email: mwjc@cuhk.hk

Printed by:
G.K. Craig Pty Ltd
239 McLachlan St
ORANGE NSW 2800
Ph (02) 6362 7411
Fax (02) 6361 3797

Distributed by:
Blackwell Science Asia
54 University St
CARLTON VIC 3053
Ph (03) 9347 0300